**Listing of Claims**

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of compression of ~~an arbitrary topology~~ a surface, comprising:

obtaining an input representation of the ~~topology~~ surface;

forming a semi-regular mesh representing a geometry of the surface where at least one vertex of the semi-regular mesh is ~~in~~ moved to a different location ~~then a vertex of~~ than in the ~~original~~ input representation; and

forming a compressed version of the semi-regular mesh.

2. (Currently Amended) A method as in claim 1, wherein said forming a semi-regular mesh comprises sliding at least one vertex within ~~a~~ the surface ~~of the topology,~~ to a location where better compression can be obtained.

3. (Currently Amended) A method as claim 1, wherein said ~~obtaining~~ forming a semi-regular mesh comprises changing a location of samples.

4. (Original) A method as in claim 1, wherein said compression comprises changing connectivity between vertices.

5. (Currently Amended) A method as in claim 1, wherein said forming the compressed version comprises carrying out a wavelet transform to replace the ~~original~~ semi-regular mesh with a ~~coarse semi-regular~~ coarser mesh~~,~~ and a sequence of wavelet coefficients.

6. (Currently Amended) A method as in claim 5, wherein said wavelet coefficients define a difference between ~~a current~~ the coarser mesh and ~~a~~ the more detailed semi-regular mesh.

7. (Currently Amended) A method as in claim 1, wherein said forming a ~~semiregular~~ semi-regular mesh and said forming a compressed version further ~~comprises~~ comprise forming a coarsest mesh, and carrying out a transform which removes correlation between vertices of remaining portions of the mesh.

8. (Original) A method as in claim 7, wherein said transform includes a Loop based wavelet transform.

9. (Original) A method as in claim 7, wherein said transform is one used for high order decorrelation and subdivision based reconstruction.

10. (Currently Amended) A method, comprising:

obtaining information on a three dimensional part, including parameter information that is described by displacements in the tangent plane to the surface and geometry

information~~,~~ that is described by displacements normal to the surface; and

compressing said information by allocating bits preferentially to displacements in the local normal direction.

11. (Original) A method as in claim 10 wherein said compressing comprises first forming a mesh of parameter information that is more regular than an original.

12. (Currently Amended) A method as in claim 11, wherein said compressing comprises uneven scaling of tangential and normal components ~~of said residuals~~.

13. (Original) A method as in claim 11, wherein said more regular meshes have substantially only normal prediction residuals.

14. (Currently Amended) A method as in claim 11 wherein said compressing comprises ~~Subsequent~~ subsequent hierarchical transformation of such meshes through a hierarchical transform.

15. (Original) A method as in claim 14, wherein said transform is based on subdivision methods.

16. (Original) A method as in claim 14, wherein said transform includes a wavelet transform.

17. (Currently Amended) A method as in claim 15, wherein said transform is a wavelet transform whose coefficients are encoded with a zero tree style coder.

18. (New) A method of compression of a surface, comprising:

obtaining an input representation of the surface;

forming a semi-regular mesh representing a geometry of the surface where at least one vertex of the semi-regular mesh is in a different location then a vertex of the input representation, the semi-regular mesh formed by sliding at least one vertex within a surface to a location where better compression can be obtained; and

forming a compressed version of the semi-regular mesh.

19. (New) A method as claim 18, wherein said forming a semi-regular mesh comprises changing a location of samples.

20. (New) A method as in claim 18, wherein said compression comprises changing connectivity between vertices.

21. (New) A method as in claim 18, wherein said forming a compressed version comprises carrying out a wavelet transform to replace the semi-regular mesh with a coarser mesh and a sequence of wavelet coefficients.

22. (New) A method as in claim 21, wherein said wavelet coefficients define a difference between the coarser mesh and the more detailed semi-regular mesh.

23. (New) A method as in claim 18, wherein said forming a semi-regular mesh and said forming a compressed version further comprise forming a coarsest mesh, and carrying out a transform which removes correlation between vertices of remaining portions of the mesh.

24. (New) A method as in claim 23, wherein said transform includes a Loop based wavelet transform.

25. (New) A method as in claim 23, wherein said transform is one used for high order decorrelation and subdivision based reconstruction.